

CLAIMS:

1. A surgical drill assembly, comprising:
an elongate shaft having a proximal end adapted to mate to a driver mechanism, and a distal end having a bone preparation element formed thereon; and
an elongate, hollow sleeve slidably disposed around at least a portion of the elongate shaft, the sleeve including a stepped region positioned between proximal and distal portions such that the distal portion has an outer diameter that is less than an outer diameter of the stepped region to allow the distal portion to be disposed within a lumen in a drill guide, and the stepped region to abut the drill guide;
wherein the elongate, hollow sleeve is effective to longitudinally align the elongate shaft therein during a surgical procedure.
2. The surgical drill assembly of claim 1, wherein the elongate shaft is biased with respect to the elongate, hollow sleeve such that a force is necessary to overcome a biasing force to cause the elongate shaft to move in a distal direction with respect to the elongate, hollow sleeve.
3. The surgical drill assembly of claim 2, further comprising a biasing member disposed within at least a portion of the elongate, hollow sleeve to bias the elongate shaft in a proximal direction such that a force greater than a biasing force created by the biasing member is required to move the elongate shaft in a distal direction with respect to the elongate, hollow sleeve.
4. The surgical drill assembly of claim 3, wherein the biasing member comprises a spring.
5. The surgical drill assembly of claim 3, wherein the elongate shaft includes a flange formed therearound that is adapted to abut the biasing member.
6. The surgical drill assembly of claim 5, further comprising a pin extending through a sidewall of the hollow sleeve and adapted to abut the flange to prevent removal of the elongate shaft from within the hollow sleeve.

7. The surgical drill assembly of claim 1, further comprising an engagement member formed on and disposed between the elongate shaft and the hollow sleeve such that the engagement is effective to temporarily maintain the hollow sleeve in a predetermined position with respect to the elongate shaft.
8. The surgical drill assembly of claim 7, wherein the engagement member comprises a ball and detent.
9. The surgical drill assembly of claim 1, further comprising a stop member disposed around a proximal portion of the elongate shaft that is effective to limit penetration of the distal end of the elongate shaft into bone.
10. The surgical drill assembly of claim 9, wherein the stop member includes a distal surface that acts on a proximal surface of the hollow sleeve to limit penetration of the distal end of the elongate shaft into bone.
11. The surgical drill assembly of claim 10, wherein the stop member comprises a hollow tube that is disposed around the elongate shaft, and that is slidably adjustable between a plurality of fixed positions along a length of the elongate shaft.
12. The surgical drill assembly of claim 11, further comprising a push-button mechanism coupled to the stop member that is effective to engage one of a plurality of detents formed in the elongate shaft to allow the position of the stop member along the length of the elongate shaft to be adjusted.
13. The surgical drill assembly of claim 11, wherein an inner surface of the hollow tube is threaded to mate with corresponding threads formed around at least a portion of the elongate shaft.

14. The surgical drill assembly of claim 13, further comprising a push-button mechanism coupled to the stop member that is effective to engage the elongate shaft to allow the position of the stop member along the length of the elongate shaft to be adjusted.
15. A surgical drill guide kit, comprising:
a drill guide member having at least one lumen formed therein and adapted to align with at least one corresponding bore formed in a spinal fixation plate;
an elongate shaft having a proximal end adapted to mate to a driver mechanism, and a distal end having a bone preparation element formed thereon; and
an elongate, hollow sleeve disposed around at least a portion of the elongate shaft, the sleeve including a distal portion that is adapted to fit within the at least one lumen in the drill guide member, and a proximal portion having at least a region with an outer diameter that is larger than an inner diameter of the at least one lumen;
wherein the elongate, hollow sleeve is effective to longitudinally align the elongate shaft with the at least one lumen in the drill guide member and with at least one corresponding bore formed in a spinal fixation plate during a surgical procedure.
16. The surgical drill guide kit of claim 15, wherein the elongate shaft is biased with respect to the elongate, hollow sleeve such that a force is necessary to overcome a biasing force to cause the elongate shaft to move distally with respect to the elongate, hollow sleeve.
17. The surgical drill guide kit of claim 16, wherein the distal tip of the elongate shaft is disposed within a distal end of the elongate, hollow sleeve when the elongate shaft is in a resting position with respect to the elongate, hollow sleeve.
18. The surgical drill guide kit of claim 16, further comprising a biasing member disposed within at least a portion of the elongate, hollow sleeve to bias the elongate shaft in a proximal direction such that a force greater than a biasing force created by the biasing member is required to move the elongate shaft in a distal direction with respect to the elongate, hollow sleeve.
19. The surgical drill guide kit of claim 18, wherein the biasing member comprises a spring.

20. The surgical drill guide kit of claim 18, wherein the elongate shaft includes a flange formed therearound that is adapted to abut the biasing member.

21. The surgical drill guide kit of claim 15, further comprising a stop member disposed around a proximal portion of the elongate shaft that is effective to limit penetration of the distal end of the elongate shaft into bone.

22. The surgical drill guide kit of claim 21, wherein the stop member includes a distal surface that acts on a proximal surface of the hollow sleeve to limit penetration of the distal end of the elongate shaft into bone.

23. The surgical drill guide kit of claim 22, wherein the stop member comprises a hollow tube that is disposed around the elongate shaft, and that is slidably adjustable between a plurality of fixed positions along a length of the elongate shaft.

24. The surgical drill guide kit of claim 23, further comprising a push-button mechanism coupled to the stop member that is effective to engage one of a plurality of detents formed in the elongate shaft to allow the position of the stop member along the length of the elongate shaft to be adjusted.

25. The surgical drill guide kit of claim 23, an inner surface of the hollow tube is threaded to mate with corresponding threads formed around at least a portion of the elongate shaft.

26. The surgical drill guide kit of claim 26, further comprising a push-button mechanism coupled to the stop member that is effective to engage the elongate shaft to allow the position of the stop member along the length of the elongate shaft to be adjusted.

27. The surgical drill guide kit of claim 15, further comprising a spinal fixation plate having at least one bore formed therein, and at least one fastening element adapted to be disposed through the bore in the spinal fixation plate.

28. The surgical drill guide kit of claim 27, wherein the at least one fastening element includes a proximal head and a distal, bone engaging portion, the proximal head having a diameter that is less than an inner diameter of the at least one lumen in the drill guide member, and that is greater than an inner diameter of the hollow, elongate sleeve.

29. The surgical drill guide kit of claim 15, wherein the at least one lumen in the drill guide member has a length that is substantially the same as a length of the distal portion of the hollow, elongate sleeve.

30. A surgical drill guide tool, comprising:

- an elongate shaft having a proximal portion and a distal portion with a bone preparation element formed therein;

- a hollow sleeve slidably disposed around at least a portion of the elongate shaft and including at least a portion that is adapted to fit within at least one of a lumen in a drill guide device and a screw bore in a spinal plate; and

- an adjustable stop member disposed around a proximal portion of the elongate shaft that is effective to limit penetration of the distal portion of the elongate shaft into bone.